

Original Article

Is Bristow-Latarjet Operation Effective for Every Recurrent Anterior Shoulder Dislocation?

Farzad Omidi-Kashani MD*, Eghbal Sadri-Mahvelati MD*, Seyed-Mahdi Mazlumi MD*, Hadi Makhmalbaf MD*

Background: The treatment of recurrent anterior shoulder dislocation in patients who failed a supervised rehabilitation program is operative stabilization. Anatomical repair addressing the underlying pathology is the preferred method. We hypothesize that Bristow-Latarjet procedure is effective in all types of traumatic recurrent anterior shoulder dislocations, although in cases with Bankart lesion, Bankart operation is certainly preferred.

Methods: Thirty-five shoulders on which a Bristow-Latarjet operation had been performed on account of traumatic recurrent anterior shoulder instability were followed up for an average of 24.6 months (range: 18 – 51). The clinical outcome was measured according to Walch-Duplay Rating Sheet for Anterior Instability of the Shoulder at the latest follow-up.

Results: The clinical outcome was excellent in 11 (31%) patients and good in 24 (69%) patients. Two patients had redislocation that were treated nonoperatively and remained symptom-free at the latest follow-up. Radial nerve palsy occurred in one patient that spontaneously recovered after nine weeks.

Conclusion: Although the treatment of anterior shoulder instability in patients with Bankart lesion and intact capsular material (without excessive laxity) is certainly Bankart operation, we claim that in almost all types of anterior shoulder instability, especially in patients with large Hill-Sachs lesions, glenoid bone loss, or excessive capsular laxity, the Bristow-Latarjet operation is associated with good or excellent results and can make the patient satisfied.

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Introduction

During the past several decades, the treatment of anterior shoulder instability has evolved substantially. Treatment was initially based on conservative management with rehabilitation protocols for shoulder girdle strengthening. Functionally disabling instability and recurrent dislocation precluded the acceptance of conservative management as the definite treatment for all patients. Attention was then turned to open repair strategies.¹

Numerous techniques have been reported for open repair.²⁻⁴ However, anatomic repair addressing the underlying pathology is the preferred method.⁵

The main pathomechanism of anterior shoulder dislocation is a functional deficiency of the anterior capsular mechanism, especially the inferior glenohumeral ligament-labrum complex. The most common cause of functional deficiency of the inferior glenohumeral ligament-labrum complex is detachment of the complex from the anterior aspect of the glenoid (a Bankart lesion). However, an anterior dislocation can cause a humeral avulsion of the inferior glenohumeral ligament or a midsubstance complete tear of the inferior glenohumeral ligament (a capsular tear).⁶⁻⁸

Use of curved awl and drill through the glenoid rim, a technique of transglenoid sutures or metal

Authors' affiliation: *Department of Orthopedics, Qaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran.

Corresponding author and reprints: Farzad Omidi-Kashani MD, No. 226, 20 Bozorgmehr St., Sajad Shahr, Mashhad, Iran.

Tel: +98-915-514-9248,

E-mail: omidif@mums.ac.ir

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stapling for Bankart operation is associated with high rate of complications.¹ But the Bankart reconstruction method with suture anchors has withstood years of security as a technique with a high success rate and minimal recurrence.^{9,10}

It is obvious that the Bankart operation cannot be so effective for the patients who had previous surgery on the affected shoulder, bone defects of the glenoid, anterior labral-ligamentous periosteal sleeve avulsion lesions, or any evident attenuation or absence of the anteroinferior glenohumeral ligament.⁹

In patients with fracture or chronic erosion of the glenoid rim or deficient anterior capsule-muscular support, the Bristow-Latarjet operation is ideal.¹⁰ But we think this technique is also effective in most other types of anterior shoulder instability. The purpose of this study was to evaluate the results of Bristow-Latarjet operation in the treatment of anterior shoulder instabilities.

Patients and Methods

We identified 35 consecutive patients who were treated surgically for anterior glenohumeral instability with Bristow-Latarjet operation from June 2002 through January 2005 at our institution.

Before surgery, all the patients had participated in a physical therapy rehabilitation program without benefit. All the patients had a positive apprehension test and experienced at least two episodes of dislocation (average: four).

Our inclusion criteria limited the study to patients with traumatic recurrent anterior glenohumeral dislocations who had anterior glenohumeral ligament-labral complex detachment, bone defects of the glenoid, or any evident attenuation or absence of the anteroinferior glenohumeral ligament.

The exclusion criteria consisted of patients who had evidence of multidirectional instability on clinical examination, had posterior instability, or athletes involved in throwing sports (in this group Bristow operation should be used as a back-up procedure when secure anatomic restoration of the capsulolabral complex cannot be obtained). The size of the Hill-Sachs lesion or previous surgery on the affected shoulder did not limit our study.

All surgeries were done according to classic Bristow-Latarjet technique.^{11,12} After six weeks limitation of active or passive elbow extension, increasing range-of-motion exercises without weights were prescribed. Periodic radiographies

were requested to note any change in the position of the transferred coracoid or the screw.

Outcomes of the study were scored using "Walch-Duplay Rating Sheet for Anterior Instability of the Shoulder", which has been validated as an outcome assessment tool.¹³ The score was measured at the latest follow-up. According to this rating system, functional score of the shoulder has 100 points with respect to resuming sport or daily activity (25 points), stability (25 points), pain (25 points), and mobility (25 points). Overall functional results of 91 – 100 points mean excellent, 76 – 90 are good, 51 – 75 are medium, and 50 or less mean poor.

Results

Our patients included 33 males and two females with an average age of 28.1 years (range: 19 – 42). The left shoulder was involved in 16 patients and the right was involved in 19 patients. The dominant extremity was involved in 54% of the patients. The average follow-up period was 24.6 months (range: 18 – 51).

There were two recurrences of dislocation among all patients. Both patients sustained traumatic dislocation more than six months after the initial operation. The patients were initially treated nonoperatively and remained symptom-free at the latest follow-up. Posterior instability was not seen in any patients.

The patients did not have any infections. One patient had a superficial hematoma that was evacuated and healed without any complications. Radial nerve palsy occurred in one patient, which spontaneously recovered after nine weeks. During the follow-up, no change in position of the transferred coracoid or the screw had occurred.

In our patients (Table 1), the average scores calculated include: resuming sport or daily activity 23.14 (range: 10 – 25), stability 24.1 (range: 15 – 25), pain 24.14 (range: 15 – 25), and mobility 17 (range: five – 25). The overall functional result of our procedure according to Walch-Duplay Rating Sheet for Anterior Instability of the Shoulder was 89.24 (good), in which 11 patients (31%) were excellent and 24 patients (69%) were good.

Discussion

There are various reports in the literature about long-term results of Bristow-Latarjet operation for recurrent anterior shoulder instability. Carol et al.

Table 1. The demographic and functional results of the patients.

Patient	Sex	Age	Daily activity	Stability	Pain	Mobility	Overall functional result
1	M	20	25	25	25	25	100
2	M	20	15	25	25	15	80
3	M	22	25	25	25	5	80
4	M	25	25	25	25	15	90
5	M	26	25	25	25	25	100
6	M	28	25	25	25	25	100
7	M	22	25	15	25	15	80
8	F	25	25	25	25	5	80
9	M	30	15	25	25	15	80
10	M	35	25	25	25	25	100
11	M	42	10	25	25	25	85
12	M	40	25	25	25	15	90
13	M	37	25	25	25	5	80
14	M	33	25	25	25	15	90
15	M	40	25	25	25	25	100
16	F	19	25	25	25	25	100
17	M	25	25	25	15	25	90
18	M	24	25	25	25	15	90
19	M	24	25	25	25	5	80
20	M	23	15	25	25	15	80
21	M	22	25	15	25	25	90
22	M	20	25	25	25	25	100
23	M	24	25	25	25	15	90
24	M	27	25	25	25	5	80
25	M	27	25	25	25	25	100
26	M	28	25	25	15	25	90
27	M	38	15	25	25	25	90
28	M	30	25	15	25	15	80
29	M	35	25	25	25	5	80
30	M	31	25	25	25	15	90
31	M	24	25	25	25	25	100
32	M	31	25	25	25	25	100
33	M	23	15	25	15	25	80
34	M	30	25	25	25	5	80
35	M	36	25	25	25	25	100

observed 44 patients for 3.7 years after Bristow operation and noted no significant complications or relapses. The average limitation of external rotation at 90 degrees abduction was 12 degrees.¹⁴ Banas et al. reported on 86 Bristow operations. They found 97% good or excellent results with 8.6 years follow-up, nine degrees decrease in external rotation, and a 4% recurrence rate.¹⁵ The reasons for failure of Bristow operation as described by Jalovaara et al. could be excessive proximal attachment of the coracoid or an unrecognized multidirectional instability.¹⁶

Hovellius et al. reported the outcome of Bristow repair in 118 shoulders with 15 years follow-up and noted a satisfaction rate of 98%. Two patients had postoperative instability but all of them were satisfied with the procedures at follow-up.¹⁷ The longest follow-up in the literature for the Bristow procedure belongs to Schroder et al. with 26.4

years. They noted 15.4% recurrent instability in 52 shoulders. The authors have shown nearly 70% good and excellent results and recurrent instability comparable with other long-term follow-up studies of open instability procedures.¹⁸

Yamashita et al. reported on 126 patients operated with a combine Bankart and Bristow procedure. They reported 90% excellent and good results with 41 months follow-up. Two patients had resubluxation, while no patient had a complete redislocation.¹⁹

Complications of a failed Bristow procedure as noted by Young and Rockwood included recurrent painful anterior instability, injury to the articular cartilage, failure of the coracoid bone-block to unite with the glenoid, loosening of the screw, neurovascular injury, and posterior instability.²⁰ The primary etiologies for failure of the procedure were excessive laxity of the capsule in 80% and an

untreated Bankart lesion in 20%. Anterior reconstruction for revision of a failed Bristow procedure was a difficult operation that necessitated meticulous technique. So, they did not recommend the procedure for primary treatment of symptomatic anterior instability of the shoulder.²⁰ The revision surgery can be successful if a methodical and diagnostic approach combined with operative management designed to address the underlying pathologic anatomy.²¹

Although the preferred treatment of anterior shoulder instability in cases with Bankart lesion and intact capsular material (without excessive laxity) is certainly Bankart operation, we claim that in almost all types of anterior shoulder instability, especially in patients with large Hill-Sachs lesions, glenoid bone loss, or excessive capsular laxity, the Bristow-Latarjet operation is associated with good or excellent results and can make the patient satisfied.

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